

**REMARKS / ARGUMENTS**

Claims 1-7, 12-18, and 27-30 are pending in the instant application. Claims 8-11 and 19-26 have been previously cancelled. Claims 1-7, 12-18 and 27-30 are rejected.

Claims 5 and 30 are rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description.

Claims 1-2, 4-7, 12-14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann et al. (U.S. Pub. No. 2002/0141441A1, hereinafter "Neumann"). in view of Kransmo (US Patent 6,594,242 B1, hereinafter "Kransmo").

Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann in view of Perlman (U.S. Pub. No. 2002/0114360A1, hereinafter "Perlman").

Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann in view of Kransmo, and further in view of Perlman.

Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann in view of Kransmo, and further in view of Schmidt (US Pub. No. 2003/0067894 A1, hereinafter "Schmidt").

The Applicant respectfully traverses these rejections and submits that claims 1-7, 12-18 and 27-30 define patentable subject matter at least for the reasons previously set forth during prosecution and at least based on the following remarks.

#### **I. EXAMINER'S RESPONSE TO ARGUMENTS**

At page 2 of the Final Office Action, the Examiner disagrees with the Applicant's argument that the combination of Neumann/Kransmo does not disclose "enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching," as recited in claim 1 by the Applicant.

Specifically, the Examiner argues in the Final Office Action:

"Kransmo discloses handover of a dual-mode wireless terminal between two different networks. Kransmo further teaches switching (handover) from a 3G communication system to a 2G communication system where the 3G communication system utilizes 3G communication protocols and the 2G communication system utilizes 2G communication protocols (see Kransmo col. 1, lines 50-67 and col. 2, lines 1-67). Thus, when the dual-mode wireless device of Kransmo is switched (handed over) from a 3G network to a 2G network, the protocols (bearers) are also switched from 3G protocol to 2G protocol so that the dual-mode device can operate in the 2G network. Thus, Kransmo's multimode processor enables switching between bearers."

See the Final Office Action at page 3. The Examiner alleges that Kransmo discloses a 3G network to 2G network (switching) handover by switching from a

3G communication protocol to a 2G communication protocol, thus reading on the claimed "switching between bearers". Specifically, the Examiner relies for support on the following citation of Kransmo:

"The present invention .. providing handover and roaming of a wireless terminal from a 3G communication system to a 2G communication system, ... **a dual-mode wireless terminal operating in a 3G communication system to obtain control channel information regarding a 2G communication system, and to switch service as a function of the control channel information received.** ... handover and roaming of a wireless terminal from a third generation (3G) communication system to a second generation (2G) communication system, **comprising the step of providing control channel information for the 2G communication system over a downlink control channel of the 3G communication system to the wireless terminal.**"

See Kransmo at col. 1, lines 51-67. The Examiner relies for support on the above citation to allege that "when the dual-mode wireless device of Kransmo is switched (handed over) from a 3G network to a 2G network, the protocols (bearers) are also switched from 3G protocol to 2G protocol so that the dual-mode device can operate in the 2G network".

The Applicant respectfully disagrees and points out that Kransmo discloses that the switching method includes the step of **providing control channel information for the 2G communication system over a downlink control channel of the 3G communication system to the wireless terminal.** In other words, Kransmo discloses **utilizing a 2G control channel information over a downlink control channel within a 3G data packet when switching over from a 3G network to a 2G network for channel search time reduction** (see

Kransmo Fig. 3, and at col. 2, lines 18-31). In this regard, Kransmo discloses that the 3G data packet continues to process the 2G channel information **without utilizing or switching to a 2G protocol**, when the dual mode mobile terminal switches from a 3G to a 2G network.

To further substantiate the Applicant's arguments, the Examiner is further referred to the following citation of Kransmo:

**"Advantages of the present invention include the prevention of drop-outs and faster switch-overs from a 3G network to a 2G network due to faster synchronization between networks. Rather than searching through 100-400 frequencies looking for a synchronization channel (SCH) burst in a 2G GSM network, a wireless mobile station is provided with the channel control information by the 3G network and thus finds the SCH in 1-10 tries, for example, reducing switchover time 100-fold. Surge times of the wireless mobile station are improved with the present invention, resulting in increased efficiency, e.g., more bandwidth is allocatable for data transmission, and also resulting in power savings for the wireless mobile station, which is especially beneficial for battery-powered wireless mobile terminals."**

See Kransmo at col. 2, lines 18-31. Kransmo, in the above citation, clearly discloses that the wireless mobile station (i.e., the dual mode mobile terminal) switches over from a 3G to a 2G network at a reduced time **based on channel synchronization information 64, which is part of the WCDMA data frame 66 within the 3G data packet 68**. There is simply no disclosure or suggestion in Kransmo of any switching from a 3G to a 2G protocol, while maintaining bearer connections during said switching. If the Examiner disagrees, the Applicant

respectfully requests the Examiner to provide specific citation in Kransmo for factual support to the contrary.

Therefore, the Applicant maintains that Kransmo does not disclose or suggest "switching between bearers... [while] maintaining bearer connections during said switching", as recited in claim 1 by the Applicant.

Accordingly, the Applicant maintains that Kransmo does not overcome the deficiencies of Neumann and submits that the combination of Neumann and Kransmo does not disclose or suggest "enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching," as recited in claim 1 by the Applicant, and a *prima facie* case of obviousness has not been established.

The Applicant submits that claim 1 is, therefore, allowable. Independent claims 13, 29 and 30 are similar in many respects to the method disclosed in independent claim 1. Therefore, the Applicant submits that independent claims 13, 29 and 30 are also allowable at least for the reasons stated above with regard to claim 1.

## **II. REJECTION UNDER 35 U.S.C. § 112, FIRST PARAGRAPH**

The Applicant now turns to the rejection of claims 5 and 30 under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement.

"Claim 30 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claim 5 has been amended to contain new matter. The phrase "from said host baseband processor via said data communication channel" added to independent claim 5 does not appear to be supported by the specification as originally filed."

See the Final Office Action at page 5. The Applicant submits that the amendments in claim 30 are supported at least by the Applicant's Fig. 9, as well as the corresponding description appearing in pages 15-17 of the specification. Specifically, claim 30 recites: "A multi-mode wireless communication device (i.e., device 900 in Fig. 9), comprising: a first baseband co-processor (i.e., WLAN baseband processor or 802.11 BB chip, including element 910 and element 924 in Fig. 9) configured to execute low-level stack operations of a first wireless communications protocol (i.e., 802.11 WLAN lower MAC and PHY layer 910 functions) employed within a first wireless communications network (i.e., 802.11 WLAN communications); a host baseband processor (i.e., host baseband processor platform 901) configured to execute a set of protocol stack operations of a second wireless communications protocol (i.e., WCDMA protocol operations performed by bearer specific WCDMA stack functions 716) employed within a second wireless communications network (i.e., WCDMA network) and higher-level stack operations of said first wireless communications protocol (i.e., 802.11 WLAN

upper MAC layer 908 functions); a data communication channel (i.e., channel shown as a line connection between host processor 916 and buffer 924 of 802.11 BB chip) between said host baseband processor (i.e., host baseband processor platform 901) and said first baseband co-processor (i.e., WLAN baseband processor or 802.11 BB chip, including element 910 and element 924 in Fig. 9) capable of carrying data received by said multi-mode wireless communication device (i.e., device 900) from said first wireless communications network (i.e., 802.11 WLAN communications) or sent by said multi-mode wireless communication device (i.e., device 900) through said first wireless communications network (i.e., 802.11 WLAN communications); and one or both of said first baseband co-processor (i.e., WLAN baseband processor or 802.11 BB chip) and said host baseband processor (i.e., host baseband processor platform 901) enabling switching between bearers (i.e., bearer specific WCDMA stack functions 716 and WLAN upper MAC layer 908) utilizing said low-level stack operations (i.e., 802.11 WLAN lower MAC and PHY layer 910 functions) and said set of protocol stack operations (i.e., protocol operations of bearer specific WCDMA stack functions 716 and WLAN upper MAC layer 908) and maintaining bearer (i.e., bearer specific WCDMA stack functions 716 and WLAN upper MAC layer 908) connections during said switching, wherein said host baseband processor (i.e., host baseband processor platform 901) comprises: a first bearer-specific module (i.e., WLAN upper MAC layer 908) for implementing bearer-

specific stack functions (i.e., 802.11 WLAN protocol processing performed by WLAN upper MAC layer 908) related to said first wireless communications protocol (i.e., 802.11 WLAN protocol); and a second buffer (buffer 920) in communication with said first bearer-specific module (i.e., WLAN upper MAC layer 908) and a common stack functions module (common stack functions 720); and wherein said first baseband co-processor (i.e., WLAN baseband processor or 802.11 BB chip, including element 910 and element 924 in Fig. 9) comprises: a first physical layer module (i.e., 802.11 Lower MAC and PHY 910) for implementing physical layer functions (i.e., 802.11 Lower MAC and PHY 910 functions); and a first buffer (i.e., buffer 924) in communication with said first physical layer module (i.e., 802.11 Lower MAC and PHY 910) and said first bearer-specific module (i.e., WLAN upper MAC layer 908) from said host baseband processor (i.e., host baseband processor platform 901) via said data communication channel (i.e., channel shown as a line connection between host processor 916 and buffer 924 of 802.11 BB chip)".

With regard to the rejection of independent claim 5, the Applicant points out that claim 5 is a dependent claim and does not contain the claim language "from said host baseband processor via said data communication channel". However, such language is found at the end of claim 30. The Examiner is referred to the arguments to claim 30 above, that the claimed "data communication channel"



refers to the line connection between host processor 916 and buffer 924 of 802.11 BB chip, as shown in Fig. 9.

Based on the above arguments, the Applicant respectfully requests that the rejection of claims 5 and 30 under 35 U.S.C. 112, first paragraph be withdrawn.

### **III. REJECTION UNDER 35 U.S.C. § 103**

In order for a *prima facie* case of obviousness to be established, the Manual of Patent Examining Procedure, Rev. 6, Sep. 2007 ("MPEP") states the following:

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

See the MPEP at § 2142, citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), and *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). Further, MPEP § 2143.01 states that "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art" (citing *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007)). Additionally, if a *prima facie* case of

obviousness is not established, the Applicant is under no obligation to submit evidence of nonobviousness:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

See MPEP at § 2142.

**A. The Proposed Combination of Neumann and Kransmo does not render Claims 1-2, 4-7, 12-14, and 16-18 Unpatentable**

The Applicant now turns to the rejection of claims 1-2, 4-7, 12-14, and 16-18 as being unpatentable over Neumann in view of Kransmo.

**A(1). Independent Claims 1 and 13**

With regard to the rejection of independent claims 1 and 13 under 35 U.S.C. § 103(a) over Neumann in view of Kransmo, the Applicant submits that the combination of Neumann and Kransmo at least does not disclose “enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching,” as recited in claim 1 by the Applicant. In the Final Office Action, the Examiner concedes the following:

“Neumann is silent about switching between bearers and maintaining bearer connections during switching as claimed”

See the Final Office Action at page 7. The Examiner then relies for support on Kransmo and states the following:

“However, the concepts of switching between different networks and hence different protocols and maintaining the connection are conventional in the art. Specifically, **during a handoff process from a first network using a first protocol to a second network using a second protocol a switch between the networks has to take place.** Consequently, the switch between different networks requires switching between different protocols.

Kransmo teaches a handover and roaming of a dual mode wireless terminal from a 3G network to a 2G network (abstract, col. 1, lines 50-67, and col. 2, lines 18-21, "handover and roaming of a wireless terminal from a third generation . . . to a second generation (2G) communication system", "operating protocols", note that a dual-mode mobile terminal capable of operating and roaming in two different systems is provided, where the handover process from a 3G system to a 2G **inherently** allows the dual mode wireless terminal to switch networks and **maintain connection with at least one of the 2G and/or 3G networks and thus maintaining connection bearer a connection)**”

See the Final Office Action at page 7 (emphasis added). The Examiner alleges that Kransmo discloses a 3G network to 2G network (switching) handover by switching from a 3G communication protocol to a 2G communication protocol, thus read on the claimed “switching between bearers”. More specifically, the Examiner relies for support on the following citation of Kransmo:

“The present invention .. providing handover and roaming of a wireless terminal from a 3G communication system to a 2G communication system, ... **a dual-mode wireless terminal operating in a 3G communication system to obtain control channel information regarding a 2G communication system, and to switch service as a function of the control channel**

**information received. ... handover and roaming of a wireless terminal from a third generation (3G) communication system to a second generation (2G) communication system, comprising the step of providing control channel information for the 2G communication system over a downlink control channel of the 3G communication system to the wireless terminal."**

See Kransmo at col. 1, lines 51-67. The Examiner relies for support on the above citation to allege that "when the dual-mode wireless device of Kransmo is switched (handed over) from a 3G network to a 2G network, the protocols (bearers) are also switched from 3G protocol to 2G protocol so that the dual-mode device can operate in the 2G network".

The Applicant respectfully disagrees and refers the Examiner to the arguments in the above section I. More specifically, Kransmo discloses that the switching method includes **providing control channel information for the 2G communication system over a downlink control channel of the 3G communication system to the wireless terminal**. In other words, Kransmo discloses **utilizing a 2G control channel information over a downlink control channel within a 3G data packet when switching over from a 3G network to a 2G network for channel search time reduction** (see Kransmo Fig. 3, and at col. 2, lines 18-31). In this regard, Kransmo discloses that the 3G data packet continues to process the 2G channel information **without utilizing or switching to a 2G protocol**, when the dual mode mobile terminal switches from a 3G to a 2G network.

To further substantiate the Applicant's arguments, the Examiner is further referred to the following citation of Kransmo:

"Advantages of the present invention include the **prevention of drop-outs and faster switch-overs from a 3G network to a 2G network due to faster synchronization between networks**. Rather than searching through 100-400 frequencies looking for a synchronization channel (SCH) burst in a 2G GSM network, **a wireless mobile station is provided with the channel control information by the 3G network and thus finds the SCH in 1-10 tries**, for example, **reducing switchover time 100-fold**. Surge times of the wireless mobile station are improved with the present invention, resulting in increased efficiency, e.g., more bandwidth is allocatable for data transmission, and also resulting in power savings for the wireless mobile station, which is especially beneficial for battery-powered wireless mobile terminals."

See Kransmo at col. 2, lines 18-31. Kransmo, in the above citation, clearly discloses that the wireless mobile station (i.e., the dual mode mobile terminal) switches over from a 3G to a 2G network at a reduced time **based on channel synchronization information 64, which is part of the WCDMA data frame 66 within the 3G data packet 68**. There is simply no disclosure or suggestion in Kransmo of any switching from a 3G to a 2G protocol, while maintaining bearer connections during said switching. If the Examiner disagrees, the Applicant respectfully requests the Examiner to provide specific citation in Kransmo for factual support to the contrary.

Therefore, the Applicant maintains that Kransmo does not disclose or suggest "switching between bearers... [while] maintaining bearer connections during said switching", as recited in claim 1 by the Applicant.

Accordingly, the Applicant maintains that Kransmo does not overcome the deficiencies of Neumann and submits that the combination of Neumann and Kransmo does not disclose or suggest "enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching," as recited in claim 1 by the Applicant, and a *prima facie* case of obviousness has not been established.

The Applicant submits that claim 1 is, therefore, allowable. Independent claims 13, 29 and 30 are similar in many respects to the method disclosed in independent claim 1. Therefore, the Applicant submits that independent claims 13, 29 and 30 are also allowable at least for the reasons stated above with regard to claim 1.

**A(2). Dependent Claims 2, 4-7, 12, 14 and 16-18**

Claims 2, 4-7, 12, 14 and 16-18 depend directly or indirectly from independent claims 1 and 13, respectively, and are, consequently, also respectfully submitted to be allowable at least for the reasons stated above with regard to allowability of claim 1. The Applicant also reserves the right to argue additional reasons beyond those set forth above to support the allowability of claims 2, 4-7, 12, 14 and 16-18.

**B. The Proposed Combination of Neumann and Perlman does not render Claims 27-28 Unpatentable**

The Applicant now turns to the rejection of claims 27-28 as being unpatentable over Neumann in view of Perlman.

**B(1). Independent Claim 27**

With regard to the rejection of independent claim 27 under 35 U.S.C. § 103(a) over Neumann in view of Perlman, the Applicant submits that the combination of Neumann and Perlman does not disclose "a first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol," as recited in claim 27 by the Applicant.

Initially, the Examiner equated Neumann's **"TDMA IS-136 network"** to be the same as the claimed **"first wireless communication network,"** and the **"GSM network"** to the claimed **"second wireless communication network"** (see the Final Office Action at page 10). However, the Examiner seems to contradict his position by later equating the **GSM system function** (for the alleged second wireless communication network) to be the same as the "bearer-specific stack functions related to said first wireless communications protocol," as recited in claim 27 by the Applicant. Specifically, the Examiner states the following:

**"a first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol** paragraphs 20, 25 and 29, "Functions dedicated to the GSM master processor include GSM system

function and control of GSM radio frequency", "The GSM master processor 202 controls all GSM system related functions and the GSM RF unit 214", note **the GSM master processor controls GSM system function. GSM system functions are the bearer - specific stack function. They are specific to GSM system functions);**"

See the Final Office Action at pages 11 and 12. Based on the Examiner's admission that Neumann teaches that the **GSM master processor system function are the bearer specific stack function to GSM system** (i.e., the alleged **second wireless communication network**), the Applicant maintains that Neumann does not disclose or suggest "**a first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol**", as recited in claim 27 by the Applicant. Perlman does not overcome the above deficiency of Neumann.

In addition, with regard to the rejection of independent claim 27 under 35 U.S.C. § 103(a) over Neumann in view of Perlman, the Applicant submits that the combination of Neumann and Perlman does not disclose "**a second buffer in communication with said first bearer-specific module and said common stack functions module ... a first buffer in communication with said first physical layer module and said first bearer-specific module,**" as recited in claim 27 by the Applicant. At page 12 of the Final Office Action, the Examiner concedes that Neumann does not disclose a first buffer and a second buffer:

**"Neumann does not specifically disclose that these buffers are located such that in the first baseband co-processor, a first buffer**



**is in communication with the first physical layer module and the first bearer-specific module, and the in the host baseband processor, a second buffer is in communication with the first bearer-specific module and the common stack functions module.** However, the concept of providing buffers between modules is conventional in the art. Particularly, in network engineering buffers are provided between network nodes to prevent traffic congestion and equalize the data flow among network nodes. Perlman discloses that buffers are provided to interconnect system module to improve system performance (Fig. 3, 5 and Par. 71, "buffers may be provided in this manner between any of the system modules")."

See the Final Office Action at page 12. The Examiner alleges that "the concept of providing buffers between modules is conventional in the art". The Examiner specifically looks to Perlman (Figs. 3, 5 and at ¶71) for support to teach the conventional art. However, the Applicant points out that Perlman is not in a relevant art, since Perlman merely discloses a system and method for processing broadcast multimedia streams, which is unrelated to the wireless communication device, let alone providing buffers for bearer specific stack processing. In this regard, Perlman does not overcome Neumann's above deficiencies in disclosing the first and second buffer in claim 27.

Based on the foregoing rationale, the Applicant maintains that the combination of Neumann and Perlman does not establish a prima facie case of obviousness to reject the Applicant's independent claim 27, and is respectfully submitted to be allowable. Claim 28 depend from independent claim 27, and is, consequently, also respectfully submitted to be allowable at least for the reasons

stated above with regard to allowability of claim 27. The Applicant also reserves the right to argue additional reasons beyond those set forth above to support the allowability of claims 27-28.

**C. The Proposed Combination of Neumann, Kransmo and Perlman does not render Claims 29-30 Unpatentable**

The Applicant now turns to the rejection of claims 29-30 as being unpatentable over Neumann and Kransmo, in view of Perlman.

**C(1). Independent Claims 29 and 30**

Regarding independent claims 29-30, the Applicant refers the Examiner to the above arguments in section III-B. Namely, Neumann does not disclose "said host baseband processor comprises: a **first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol**," and "said baseband co-processor comprises ... a **first buffer** in communication with said first physical layer module and said first bearer-specific module," as recited in claims 29 and 30 by the Applicant. In addition, Kransmo and Perlman do not overcome the above deficiencies of Neumann.

Moreover, the Examiner is referred to the same argument to independent claim 1 above, that the combination of Neumann and Kransmo does not disclose

or suggest **“enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching,”** as recited in claims 29 and 30 by the Applicant. Perlman does not overcome the above deficiencies of Neumann and Kransmo.

Therefore, the Applicant submits that independent claims 29 and 30 should be allowable. Accordingly, the Applicant believes the rejection of independent claims 29 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Neumann in view of Kransmo and Perlman has been overcome and requests that the rejection be withdrawn.

**D. The Proposed Combination of Neumann, Kransmo and Schmidt Does Not Render Claims 3 and 15 Unpatentable**

Claims 3 and 15 depend from independent claims 1 and 13, respectively, and are, consequently, also respectfully submitted to be allowable at least for the reasons stated above with regard to allowability of claim 1. The Applicant also reserves the right to argue additional reasons beyond those set forth above to support the allowability of claims 3 and 15.

**CONCLUSION**

Based on at least the foregoing, the Applicant believes that all claims 1-7, 12-18 and 27-30 are in condition for allowance. If the Examiner disagrees, the Applicant respectfully requests a telephone interview, and requests that the Examiner telephone the undersigned Patent Agent at (312) 775-8093.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

A Notice of Allowability is courteously solicited.

Respectfully submitted,

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